

REMARKS/ARGUMENTS

I. Status of the Claims

The Office Action incorrectly states that only claims 1, 5-8 and 16-17 are pending. In the Office Action response filed on May 5, 2003, new claims 18-20 were added. Thus, the claims pending prior to entry of this Office Action are 1, 5-8, and 16-20.

Upon entry of this amendment, claims 1, and 5-7 are amended and claims 8 and 16-20 canceled without prejudice or disclaimer. Applicants reserve the right to reintroduce the unamended or canceled claims in this or another application. New claim 21 is introduced upon entry of this amendment. Claims 1, 5-7 and 21 are thus pending following entry of this amendment.

The amendments to claims 6 and 7 simply correct typographical errors. The other amended claims and new claim 21 are supported throughout the specification, including, for example, the following sections:

Claim 1: page 129, lines 6-10; and page 141, 21-25.

Claims 5 and 21: page 16, line 28; page 17, lines 1-2; page 123, lines 11-19; and page 124, lines 1-4.

II. Interview

Applicants thank the Examiner for the courtesy he extended in discussing this application with Applicants' representatives during an interview held on December 2, 2003. The current response incorporates suggestions made during the interview and is believed to put the case in condition for allowance. An Interview Summary as required under 37 C.F.R. 1.133 is enclosed with this response.

III. Amendments to the Specification

The title has been amended to reflect more closely the subject matter of the currently pending claims.

The entry for TAX1-IP in Table 7 on page 94 has been amended to clarify that this protein refers to TAX-IP-1, for TAX Interaction Protein 1 (or simply TIP-1). A copy of the GenBank Accession number referred to in Table 7 for this entry (2613001) is enclosed to confirm this.

These amendments introduce no new matter.

IV. Claim Rejections under 35 U.S.C. §112, Second Paragraph

Claims 5 and 6 have been amended so they no longer depend upon canceled claims.

V. Claim Rejections under 35 U.S.C. §112, First Paragraph

Claims 1, 5-8 and 16-17 are rejected under 35 U.S.C. §112, first paragraph because the Office Action takes the view that the specification does not adequately enable the current claims. The Office Action offers two primary rationales for justifying this conclusion: 1) the specification does not disclose that LPAP and TIP-1 are expressed in any and all endothelial or hematopoietic cells and 2) the specification does not indicate what function LPAP has in endothelial or hematopoietic cells. These two concerns are addressed in turn.

With respect to the first concern, it is first noted that base claim 1 has been amended to recite to T-cells rather than endothelial or hematopoietic cells. So, with respect to the current claims, the issue thus becomes whether LPAP and TIP-1 are expressed in T-cells.

As the Examiner acknowledges, the Ding article (Eur. J. Immunol. 29:3956-61, 1999) that was enclosed with the last Office Action response provides evidence that LPAP is expressed in T-lymphocytes. Two additional articles that published before the priority date of the instant application are enclosed and state that LPAP protein is expressed in T-lymphocytes. These two articles are: 1) Schraven, B. et al. (1994) J. Biol. Chem. 269:29102-29111 (for a discussion regarding protein expression of LPAP in T-cells, see, e.g., abstract, last sentence on p. 29102 and p. 29105, section entitled "Tissue Distribution of LPAP"); and 2) Bruyns, E. et al. (1996) J. Biol. Chem. 270:31372-31376 (for discussion regarding protein expression in T-cells, see, e.g., abstract and p. 31372, second column, third full paragraph). It was thus recognized by

those of ordinary skill in the art before the filing date of the instant application that LPAP is expressed in T-cells. The specification in Table 7 page 94 indicates that TIP-1 is also expressed in T-cells. As noted above, in this table, TIP-1 (TAX Interaction Protein-1) is referred to as TAX1-IP. The methods utilized to determine that TIP-1 is expressed in T-cells are described at page 38, line 12 to page 39, line 26 (note that this section of the specification refers to TIP-1 as TAX-1; see, e.g., page 39, line 24).

The foregoing evidence thus demonstrates that both LPAP and TIP-1 are expressed in T-cells, thereby addressing the first concern raised in the Office Action.

With regard to the second enablement issue raised in the Office Action, the Office maintains its position from the previous Office Action that the claims are not enabled because the function of LPAP in T-cells is not known. In response, Applicants reiterate the point made in their last response, namely that the specification does in fact ascribe a role for LPAP, noting that certain evidence indicates that LPAP is involved in the organization of a functional CD45 complex (see, page 111, lines 24-25). This role is substantiated by the discussion in the Schraven and Bruyns articles mentioned above. These two articles state: 1) that LPAP and CD45 associate non-covalently in T-cells (see, e.g., Schraven at abstract, paragraph bridging pages 29102 and 29103, and concluding paragraph on page 2911; see, also, the Bruyns abstract); and 2) that CD45 plays a role lymphocyte activation (see, e.g., Schraven at abstract, paragraph bridging columns 1 and 2 of page 29102, and concluding paragraph on page 2911; see, also, introduction to Bruyns on page 31372).

These articles thus indicate that LPAP interacts with CD45 to control T-cell activation. The present claims have been amended to reflect this activity. Accordingly, it is submitted that the second concern expressed in the Office Action is also fully addressed.

For the foregoing reasons, it is submitted that the enablement rejection should be withdrawn.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 303-571-4000.

Appl. No. 09/724,553
Amdt. dated January 14, 2004
Reply to Office Action of July 14, 2003

PATENT

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Scott Ausenhus". The signature is fluid and cursive, with the first name "Scott" and last name "Ausenhus" clearly distinguishable.

Scott L. Ausenhus
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